



FortiExtender Release Notes

VERSION v3.0.2

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FortiExtender v3.0.2 Release Notes

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Change Log

Date	Change Description
2016-10-28	Updated from v3.0.1 to v3.0.2 for the third release. The branch point is build 0089.
2016-08-17	Updated from v3.0.0 to v3.01 for the second release. The branch point is build 0084.
2016-04-06	Initial Release.

Introduction

This document provides the following information for FortiExtender build 0089:

- [Supported Models](#)
- [What's new in FortiExtender v3.0.2](#)
- [Model Specific New Features](#)
- [Special Notices](#)
- [Upgrade Information](#)
- [Product Integration and Support](#)
- [Resolved Issues](#)
- [Known Issues](#)

For more information on upgrading your FortiExtender device, see the *FortiExtender Administration Guide*.

Supported Models

FortiExtender supports the following models on GA build 69 or above: FEXT-20D, FEXT-40D-INTL, and FEXT-40D-NAM.



The built-in modems residing in FEXT-40D-NAM and FEXT-40D-INTL can also be upgraded with compatible operator specific modem firmware.

What's new in FortiExtender v3.0.2

The following is a list of features and enhancements that are supported in 3.0.2 similar to the 3.0.1 GA release:

- **Enhanced FortiExtender CLI/ GUI** to help improve configuration and diagnose commands. The following commands are currently supported:
 - Configure FortiExtender networking parameters with the following commands:

```
config connection addr-mode static| dhcp
config connection static-ip-addr x.x.x.x
config connection static-ip-netmask x.x.x.x
config connection static-ip-gw x.x.x.x
```
 - Configure FortiExtender networking parameters with the following command:

```
config connection discovery-type auto| static | broadcast
```
 - Show the system version with the following command:

```
get system version
```
 - Show the FortiGate connection status with the following command:

```
get extender status
```
 - Show the modem status with the following command:

```
get modem status
```

- Show system status with the following command:

```
get system status
```

- The FortiExtender 20-D GUI home page is displayed below:

FortiExtender FXT20D

System Modem ? Help admin

General REFRESH

Host Name	FXT02D4N15000008 Change
Serial Number	FXT02D4N15000008
Firmware Version	FortiExtender-20D v3.0.build0089.161026 (interim)
System Time	Fri Oct 28 20:57:06 UTC 2016
Uptime	0 min(s)

Device Info REFRESH

IP Address	192.168.10.112
Network Mask	255.255.255.0
Gateway IP	192.168.10.99
IP Address	192.168.10.99
Device Name	FGT60D-4613057602
State	connected

Hardware REFRESH

CPU 5.0%

Memory 13.0%

Network Configuration REFRESH APPLY

Address Mode	<input type="radio"/> Static <input checked="" type="radio"/> DHCP
Default Local IP Address	192.168.1.2
Default Local Network Mask	255.255.255.0
Default Gateway IP	192.168.1.1

CAPWAP Configuration REFRESH APPLY

Discovery Type	<input checked="" type="radio"/> Auto <input type="radio"/> Static <input type="radio"/> Broadcast
Extender Controller Port	5246
Extender Data Port	25246
FortiGate IP	192.168.1.1

Firmware Upgrade RESET UPGRADE

Step 1: Firmware ☒ Extender

Step 2: File [Choose File](#) No file chosen

- The FortiExtender 20-D GUI status page is displayed below:

FortiExtender FXT20D

System Modem ? Help admin

Modem Status REFRESH

Manufacture	Novatel Wireless Incorporated
Product	Novatel Wireless 4G
Model	USB551L
Revision	1.48 SVN 11 [2012-04-30 18:44:34]
IMSI	311480057536097
PIN Status	READY
Service	LTE
Signal Strength(%)	57
Signal Strength(dBm)	-78
Connection Status	disabled
Profile 1	vzwims
Profile 2	vzwadmin
Profile 3	VZWINTERNET
Profile 4	vzwapp
NAI(Network Access Identifier)	4084973416@vzims.com
User Profile	0 Enabled
Primary HA	255.255.255.255
Secondary HA	255.255.255.255

- The new FortiExtender-40D GUI home page is displayed below:

FortiExtender-40D GUI Home Page:

- General:** Host Name: FEXT40D, Serial Number: FX04DN4N16000233, Firmware Version: FortiExtender-40D v3.0.build0089.161026 (Interim), System Time: Fri Oct 28 20:57:55 UTC 2016, Uptime: 16 min(s).
- Device Info:** IP Address: 192.168.10.111, Network Mask: 255.255.255.0, Gateway IP: 192.168.10.99, IP Address: 192.168.10.99, Device Name: FGT60D4613057602, State: connected.
- Hardware:** CPU 5.0%, Memory 15.0%.
- Network Configuration:** Address Mode: Static, Default Local IP Address: 192.168.1.2, Default Local Network Mask: 255.255.255.0, Default Gateway IP: 192.168.1.1.
- CAPWAP Configuration:** Discovery Type: Auto, Extender Controller Port: 5246, Extender Data Port: 25246, FortiGate IP: 192.168.1.1.
- Firmware Upgrade:** Step 1: Firmware (Extender, Sim1 Firmware, Sim1 PRI, Sim2 Firmware, Sim2 PRI), Step 2: File (Choose File, No file chosen).

- The new FortiExtender-40D status page is displayed below:

FortiExtender-40D Status Page - Modem Status:

Manufacture	Sierra Wireless, Incorporated
Product	Sierra Wireless Minipci modem
Model	EM7355
Revision	GENUE-4G_005.026_000;SWI9X15C_05.05.58.00 r27038 carmd-fwbuild1
IMSI	310410596203412
PIN Status	N/A
Service	WCDMA
Signal Strength(%)	-61
Signal Strength(dBm)	-61
Connection Status	CONNECTED
Profile 1	
Profile 2	
Profile 3	
Profile 4	
NAI(Network Access Identifier)	N/A
User Profile	0 Disabled
Primary HA	0.0.0.0

Model Specific New Features

FortiExtender-40D

The FortiExtender-40D is a FortiExtender model with an embedded Sierra Wireless modem and has the following capabilities:

- LTE support
- Global operator support with Firmware upgrades
- Dual SIM function support
- Modem Firmware upgrade and switch support via GUI/CLI only

- Individual SIM slot modem firmware and PRL load only via GUI and CLI commands
- Dual SIM failover support
- SIM hot plug support
- Supports all the same Fortigate configurations and diagnose commands

For the FortiExtender-40D, the following FortiExtender CLI commands are supported:

- CLI command to config the max time to elapse before system reboot during call connection
- CLI command to set the active SIM slot
- CLI command to set modem operating mode

Noteworthy Improvements over FortiExtender 3.0.1

There are several improvements in FortiExtender 3.0.2 in comparison with the previous version of FortiExtender 3.0.1.

These include the following improvements for the FortiExtender-40D:

- Reports the condition of SIMs that aren't detected to the FortiGate.
- Handles payloads larger than the Ethernet MTU received via LTE WAN interface.
- Reports the active SIM's IMSI number and its corresponding SIM slot number.

There have also been improvements for the FortiExtender-20D:

- Handles payloads larger than the Ethernet MTU received via LTE WAN interface.

Special Notices

This section highlights some of the operational changes that administrators should be aware of in v3.0.2.

FortiExtender-20D

FortiExtender-20D requires an external USB modem from the FortiExtender-20D supported modem list on ["Product Integration and Support"](#) on page 1.

FortiExtender-40D-NAM

FortiExtender-40D-NAM has a built-in Sierra internal modem EM7355 for North America.

FortiExtender-40D-NAM is capable of holding two SIM cards, but can only use one SIM card at a time. The FortiExtender-40D-NAM is also capable of working with just one SIM card inserted in either SIM card slot.

For faster deployment options, the FortiExtender-40D-NAM model stores two modem firmwares in its flash which can be used if compatible with any of the SIM cards inserted.

See the details below:

- Generic modem software capable of working on AT&T and T-Mobile Networks mapped to SIM slot 1.
- Verizon specific software capable of working only on Verizon Network mapped to SIM slot 2.
- For operating on SPRINT or any other Canadian Networks the modem has to be reflashed with compatible modem firmware and PRI file onto the corresponding SIM slot.

The FortiExtender-40D-NAM will try to activate the Internet connection with SIM1 using one of the compatible modem firmwares stored on the flash. If SIM1 fails, then it will use SIM2 by flashing the modem firmware from secondary flash partition (if SIM2 requires a different modem firmware).

FortiExtender-40D-INTL

FortiExtender-40D-INTL has a built in Sierra internal modem EM7305 for countries outside of North America.

FortiExtender-40D-INTL is capable of holding two SIM cards, but can only use one SIM card at a time. The FortiExtender-40D-INTL is also capable of working with just one SIM card inserted in either SIM card slot.

For faster deployment options, the FortiExtender-40D-INTL model stores two modem firmwares in its flash which can be used if compatible with any of the SIM's inserted.

See the details below:

- Generic modem software networks like SFR, FREE, 02, and etc mapped to SIM slot 1.
- Vodaphone Specific software capable of working on only Vodaphone Network mapped to SIM slot 2.

- For operating on any other ISP networks the modem has to be reflashed with compatible modem firmware and PRI file onto the corresponding SIM slot.

The FortiExtender-40D-INTL will try to activate the Internet connection with SIM1 using one of the compatible modem firmwares stored on the flash. If SIM1 fails, then it will use SIM2 by flashing the modem firmware from secondary flash partition (if SIM2 requires a different modem firmware).

Modem firmware compatibility

The modem firmware running on the Sierra built-in internal modem must be compatible with the SIM card inserted. Often this requires that you program it with the compatible operator specific modem firmware.

Access Point Name

Access Point Name configuration for the FEXT models is available from the FortiGate CLI and GUI.

Upgrade Information

Upgrading to FortiExtender v3.0.2

FortiExtender-20D and FortiExtender-40D are capable of operating on v3.0.0 GA build 69 and above.

The built-in modems residing in FEXT-40D-NAM and FEXT-40D-INTL can also be upgraded with compatible operator specific modem firmware.

Firmware upgrade procedure

Firmware Information:

The Sierra EM7355/EM7305 Modem Software comprises of two files:

- A PRL file with the file name ending ".nvu"
- A firmware file with the ending ".cwe"

Both files are required to be flashed onto the Modem to connect to the operator of your choice. See the following resources:

- EM7305 modems with operator specific software: <https://support.fortinet.com>
- EM7355 modems with operator specific software: <https://support.fortinet.com>

Firmware upgrade via the FortiExtender GUI:

1. Login to the web-based GUI of the FortiExtender with the default credentials. For the username enter *admin* and leave the password blank.
2. In the FortiExtender GUI from in the bottom right corner, click **Choose Firmware** and select the corresponding SIM1 firmware from the dropdown menu and flash it. I.e. the firmware ending in ".cwe".
3. Select the corresponding SIM1 PRL, i.e the ".nvu" file from the list (as per ISP).
4. After the upgrade is completed, click on the **RESTART** button and confirm with a **YES**.
5. This procedure can take 3 to 5 minutes to finish. Wait for the reboot and make sure the SIM1 slot is holding the SIM.
6. If you are using two SIM cards, repeat these instructions for your second SIM card by selecting SIM2 PRL and SIM2 firmware options.

Firmware image checksums

The MD5 checksums for all Fortinet software and firmware releases are available at the Fortinet Customer Service & Support portal located at <https://support.fortinet.com>. After logging in select **Download > Firmware Image Checksums**, enter the image file name including the extension, then select **Get Checksum Code**.

Product Integration and Support

Modes of operation

FortiExtender supports Connected UTM mode of operation only.

Connected UTM mode

This is the default mode of operation where the FortiGate provides centralized management of the FortiExtender infrastructure. In this mode the device discovers the FortiGate using the CAPWAP protocol and WAN traffic is tunneled to the FortiGate's wireless WAN virtual interface. For connect UTM mode, FortiGates must run FortiOS v5.2.0 or later.

FortiExtender v3.0.2 support

The following table lists FortiExtender product integration and support information.

FortiExtender 3.0.2 Support	
Web Browsers	Microsoft Internet Explorer versions 10 and 11
	Mozilla Firefox version 33
	Other web browsers may function correctly, but are not supported by Fortinet.
FortiOS/FortiOS Carrier	v5.2.0 and later
FortiManager	v5.0.7 and later
	v5.2.0 and later

USB modem support

The following tables list USB modems that are supported for various models.

FortiExtender-20D

The following table lists USB modems that are supported by the FortiExtender-20D:

Brand	Modem Model	Operator / Area
Netgear	340U	AT&T (USA)
Sprint	341U	Sprint (USA)
Sierra	313	AT&T (USA)
Pantech	295	Verizon
ZTE	820B	Claro (Puerto Rico)
ZTE	MF683	T-Mobile
Novatel	MF620L	Verizon
Huawei	E398	Any GSM/LTE
Huawei	UMG1691	T-Mobile
Huawei	E173	Any GSM, 3G, HSPA network
Huawei	E3276	Any GSM/LTE
TPLINK	MA260	Any GSM/3G
TPLINK	MA180	Any GSM/3G
ZTE	K3520-Z	HSDPA, WCDMA
ZTE	K3563-Z	
ZTE	K3565-Z	HSDPA 3.6/0.38
ZTE	K3570-Z	HSDPA 3.6/0.38
ZTE	K3571-Z	HSDPA 7.2/0.38
ZTE	K4505-Z	HSPA+ 21.6/5.76
ZTE	K5006-Z	LTE CAT3
ZTE	MF30	HSDPA 7.2 HSUPA 5.76
ZTE	MF60	HSPA+ 21.6/5.76
ZTE	MF100	HSDPA 3.6/0.38
ZTE	MF110	HSDPA 7.2 HSUPA 5.76

Brand	Modem Model	Operator / Area
ZTE	MF112	HSDPA 7.2 HSUPA 2.0
ZTE	MF170	HSDPA 3.6/0.38
ZTE	MF190	HSDPA 7.2 HSUPA 2.0
ZTE	MF626	HSDPA 3.6/0.38
ZTE	MF627	HSDPA 7.2 HSUPA 5.76
ZTE	MF632	HSDPA 7.2 HSUPA 3.6
ZTE	MF633	HSDPA 7.2 HSUPA 5.76
ZTE	MF636	HSDPA 7.2 HSUPA 5.76
ZTE	MF637	HSDPA 7.2 HSUPA 5.76
ZTE	MF637U	HSDPA 7.2 HSUPA 5.76
ZTE	MF662	HSPA+ 21.6/5.76
ZTE	MF668	HSPA+ 21.6/5.76
ZTE	MF668A	HSPA+ 21.6/5.76
ZTE	MF669	HSPA+ 21.6/5.76
ZTE	MF680	DC-HSPA+ 42.2/5.76
ZTE	MF683	DC-HSPA+ 42.2/5.76
ZTE	MF820D	LTE CAT3
ZTE	MF821	LTE CAT3
ZTE	MF821D	LTE CAT3
ZTE	MF880	LTE CAT3
ZTE	MT505UP	HSUPA
ZTE	MT512HS	HSDPA 7.2 HSUPA 3.6
ZTE	MT8205	LTE CAT3
HUAWEI	B81	HSDPA 7.2 HSUPA 5.76

Brand	Modem Model	Operator / Area
HUAWEI	D33HW	HSPA+ 21.6/5.76
HUAWEI	D41HW	DC-HSPA+ 42.2/11.5
HUAWEI	E153	HSDPA 3.6/0.38
HUAWEI	E156G	HSDPA 3.6/0.38
HUAWEI	E171	HSDPA 7.2 HSUPA 5.76
HUAWEI	E173	HSDPA 7.2 HSUPA 5.76
HUAWEI	E180V	HSDPA 7.2 HSUPA 5.76
HUAWEI	E200	HSDPA 3.6
HUAWEI	E261	HSDPA 7.2 HSUPA 5.76
HUAWEI	E270+	HSPA+ 21.6/5.76
HUAWEI	E303F	HSPA+ 21.6/5.76
HUAWEI	E352	HSPA+ 21.6/5.76
HUAWEI	E353W-u1	HSPA+ 21.6/5.76
HUAWEI	E367	DC-HSPA+ 28.8/5.76
HUAWEI	E372	DC-HSPA+ 42.2/5.76
HUAWEI	E389	LTE CAT3
HUAWEI	E392	LTE CAT3
HUAWEI	E398	LTE CAT3
HUAWEI	E398u-15	LTE CAT3
HUAWEI	E1552	HSDPA 3.6/0.38
HUAWEI	E1690	HSDPA 7.2 HSUPA 5.76
HUAWEI	E1691	HSDPA 7.2 HSUPA 5.76
HUAWEI	E1692	HSDPA 7.2 HSUPA 5.76
HUAWEI	E1731Bu-1	HSPA+ 21.6/5.76

Brand	Modem Model	Operator / Area
HUAWEI	E1762	HSDPA 7.2 HSUPA 5.76
HUAWEI	E1800	HSDPA 7.2 HSUPA 5.76
HUAWEI	E1815	HSPA+ 21.6/5.76
HUAWEI	E1820	HSPA+ 21.6/5.76
HUAWEI	E1823	HSPA+ 21.6/5.76
HUAWEI	E3131s-2	HSPA+ 21.6/5.76
HUAWEI	EC122	CDMA2000
HUAWEI	EC176-2	CDMA EV-DO Rev.A
HUAWEI	EC178	CDMA EV-DO Rev.A
HUAWEI	EC189	HSDPA 7.2 HSUPA 5.76
HUAWEI	EC306	HSPA+ 21.6/5.76
HUAWEI	EC1270	DC-HSPA+ 42.2/11.5
HUAWEI	Speedstick LTE	HSDPA 3.6/0.38
HUAWEI	E3372	LTE CAT4

Resolved Issues

The following issues have been fixed in version v3.0.2. For inquiries about a particular bug, please contact [Customer Service & Support](#).

Bug ID	Description
N/A	[20D] Huawei E3372's reported modem bugs were resolved.
N/A	[20D] Novatel 620's reported modem bugs were resolved.
N/A	[40D] SPRINT certification support.
0386466	[40D] The report of a FortiGate with an incompatible modem firmware (or a mismatch between the firmware and PRI pairs for syslogging) now resolved.
0386702	[40D] Fixed issues with the Modem Manager regarding handling modem firmware upgrades.
0378992	[40D] CLI bug fixes for modem firmware upgrades and displaying of the currently stored modem firmwares on the flash.
372352	[40D] Signal LED synchronization.
N/A	[20D] [40D] Minicom serial utility bugs were resolved.
N/A	[20D] [40D] Improvements in handling payloads larger than the Ethernet MTU received via LTE WAN interface.

Known Issues

The following issues have been identified in v3.0.2. For inquiries about a particular bug, please contact [Customer Service & Support](#).

FortiExtender 40D:

Bug ID	Description
N/A	[40D] The 40D Sprint Cert is missing fields like DRC, PN code, PN offset, and etc in the EVDO AT command output.
0381291	[40D]The FortiExtender may not get connected during repeated dial/ hangups and commands executed manually, such as stopping LTE sessions during hangup, might take time.
0378848	[40D] Changing from CAPWAP to VLAN mode and vice-versa requires a reboot.
N/A	[40D] If the firmware download fails, manual recovery may be necessary.
N/A	[40D] The physical insertion of a SIM card requires a FortiExtender power cycle.



High Performance Network Security



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